CLAIMS

1. A magnetic force generator comprising:

a shell internally defining an armature chamber having an axis;

at least two circumferential electric coils spaced axially within the chamber;

5   an armature supported in the chamber for reciprocation on the axis, the armature including at least two axially spaced permanent magnets mounted on an axially extending steel magnetic tube;

resilient members nominally centering the armature in the chamber;

10   the permanent magnets extending axially, inwardly adjacent and in general alignment with the electric coils;

the magnets having radially extending flux lines passing through the coils; and

controlled energizing of the coils being operative on the

15   permanent magnets to reciprocate the armature axially in a controlled manner relative to the shell to develop an opposite inertia force on the shell for application to a connected body.

2. A magnetic force generator as in claim 1 wherein the magnets are cylindrical.

3. A magnetic force generator as in claim 1 wherein the resilient members are compression springs.

4. A magnetic force generator as in claim 1 wherein the shell is part of a housing including non-magnetic ends closing the chamber.

5. A magnetic force generator as in claim 1 wherein the shell is formed of material which carries magnetic flux.

6. A magnetic force generator as in claim 5 wherein the shell material is carbon steel.

7. A magnetic force generator as in claim 1 wherein the armature has end caps formed of a non-magnetic material.

8. A magnetic force generator as in claim 1 wherein the magnets are formed of a suitable magnetic material.

9. A magnetic force generator as in claim 8 wherein the magnetic material is ferrite.

10. A magnetic force generator as in claim 1 wherein the magnets are radially magnetized in opposite directions.

11. A magnetic force generator as in claim 1 wherein the coils are wound in opposite directions.

12. A magnetic force generator as in claim 1 wherein the axial length of the coils is generally similar to the axial length of the magnets.